UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,487	09/26/2000	Ivy Pei-Shan Hsu	M-8639 US	4335

33707 7590 11/03/2005		EXAMINER
LEGAL DEPARTMENT		SALAD, ABDULLAHI ELMI

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ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/670,487	HSU ET AL.
Office Action Summary	Examiner	Art Unit	
	Salad E. Abdullahi	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 August 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26 and 70-101* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26 and 70-101,* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/30/2005*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response

1.   Applicant's response filed on has been received and made of record

2.   Applicant's arguments with respect to claims 1-26 and 70-101, have been
fully considered but are not persuasive for the following reason(s).

A)   Applicant alleges Logan doe not teach the authoritative name server and
the load balancing switch being separate network devices.

Examiner respectfully disagrees because, Logan's switch-based server
load balancers consolidates multiple web infrastructure functions and load
balancing application servers with multi-layer switching. The purpose of such
clustering is to provide plurality of network application such as name resolution,
redirection traffic to caches, load balancing traffic to multiple firewalls, packet
filtering and bandwidth management **while at same** making the group appear as
one server or system to the network.(see col. 1, lines 48-61). This indicates the
authoritative name server and the load balancing switch does not have to be an
embedded system as the applicant contends. They can be separate devices
within such consolidated infrastructure as Logan's distributed load balancing
system.

In addition, Logan's figure 2 discloses a site switch 202 and server sites
204-212, where each site represents domain. Logan teaches there is single
Authoritative name server for every domain (see col. 5, lines 21-23). Load
balancing Switch 202 is separate from domain 204-212 which include
Authoritative name server.

B)   Applicant also alleges Logan does not include round trip time data

involving client machine.

Examiner respectfully disagrees because Logan teaches the client is

directed to a particular server based on several factors including showing good

response time or the servers that are healthiest and the server closely located to

the client (see col. 5, lines 3-18).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

4.   Claims 1-26 and 70-101 rejected under 35 U.S.C. 103(a) as being

unpatentable over Logan et al., U.S. Patent No. 6,578,066 in view of Chauhan

U.S. Patent No. 6,115,752[hereinafter Chauhan].

As per claim 1, Logan et al., disclose a method of providing load balancing

among host servers in a computer using a load balancing switch and plurality of

site switches, comprising:

collecting at said load balance switch a first set of performance metrics (i.e.

health check among the load balancing server switches) regarding said computer

network , each said of host servers being accessed through at least one said site

switch (see col. 5, lines 3-65 and col. 6, lines 14-41);

whenever said authoritative domain name server provides network addresses in

response to a query regarding a domain name (see col. 11, 51 to col. 12, and

col. 5, lines 45-59);

arranging at said load balancing switch said network addresses as an ordered list

in accordance with said performance metrics (see the abstract and col. 3, lines 9-

25 and col. 6, lines 14-41);

 forwarding said ordered list of network addresses as a response to said query to

an originator of said query (see col. 11, line 51 to col. 12, line 4).

receiving, at said load balancing switch , a plurality of network addresses

generated by an authoritative domain name system server in response to a query

regarding a domain name, the authoritative domain name system server and the

load balancing switch being separate network devices (see fig. 2 and col. 6, lines

51-59).

In considering claim 2, Logan et al., discloses a distributed load balancing

system further comprising:

collecting a second set of performance metrics (i.e. response time minimum

delay, least cost) regarding said network, said second set of performance metrics

reflecting access conditions (load, throughput or availability) to said host servers

(204-212) at each of said site switches (202) (see fig. 2, and col. 6, line 14-41);

sending said second set of performance metrics from said site switches (204-

212) to said load balancing switches (108, 106, 110)(see col. 6, line 14-41); and

including said second set of performance metrics with said first set of

performance metrics [that is the load balancing switch including second

performance metric i.e. response time received from site switches 202 with first

performance metric i.e. health of the network or in other wards combing several

performance metric to determine best site or server](see col. 5, lines line 46 to

col. 6, line 3 and col. 11, line 50 to col. 6, line 4).

arranging, at said load balancing switch, said network addresses as an ordered

list in accordance with at least some of said second set of performance metrics

(see col. 3, lines 9-25 and col. 6, lines 14-41).

In considering claim 3, Logan et al., disclose a distributed load balancing system

wherein said first set of performance metrics includes a health check sent from

said load balancing switch to each of said site switches (see col. 5, line 60 to col.

6, line col. 6, line 3, and col. 6, lines 14-41).

In considering claim 4, Logan et al., disclose a distributed load balancing system

wherein, when any of said host servers fails said health check, a network

address of said failed host server is provided a lesser position in said ordered list

(see col. 11, line 41 to col. 12, line 3).

In considering claim 5, Logan et al., discloses a distributed load balancing

system, wherein said collection of said second set of performance metrics

includes recording, at each site switch, a number of sessions(connections)

connected to host servers having network addresses configured on said site

switch (that is determining if host servers reach at there respective Maximum

connection)(see col. 5, lines 38-45 and col. 9, lines 1-35).

In considering claim 6, Logan et al., discloses a distributed load balancing

system wherein when said number of sessions (connection) at said site switch

exceeds a predetermined percentage of that site switch's maximum capacity, a

corresponding one of said network addresses is provided a lesser position in said

ordered list [i.e. ordering the list of IP addresses for host server 210, 204, 206,

and 208 in order of priority, the 900 msec response time of server 210 gets

highest position] (see col. 6, lines 14-41 and col. 9, lines 5-35).

In considering claim 9, Logan et al., discloses a system wherein said arranging

takes into consideration the geographical location of said originator of said query

(see col. 10, lines 6-65).

In considering claim 10, Logan et al., discloses a system, wherein said collecting

of said first set of performance metrics includes recording a time interval for each

site switch between said load balancing switch initiating said health check and

said load balancing switch receiving a response from said site switch (see col. 5,

line 3 to col. 6, lines 13).

In considering claim 11, Logan et al., discloses a system, wherein said arranging selects a network address of a least recently selected host server for placement at a higher position in said ordered list (i.e. host with 900 msec response time is the least selected host and is positioned highest on the list)(see col. 6, lines 14-41).

In considering claim 12, Logan et al., discloses a system, further comprising said load balancing switch limiting a valid time (TTL) for each network address in said ordered list to less than predetermined value (see col. 11, lines 9-13).

In considering claim 13, Logan et al., discloses a system, further comprising, when a connection request is received at a site switch for a connection to one of said host servers, said site switch redirecting said connection request to another one of said host servers (see col. 5, lines 38-45 and col. 10, line 66 to col. 11, line 9).

As per claim 14, Logan et al., disclose a system for load balancing among host servers (204) in a computer network, comprising:
an authoritative domain name server [the authoritative name server not shown explicitly on the figures is part of the distributed site 100, (see fig. 1, col. 3, line 39 to col. 4, line 36 and col. 5, lines 19-59), which describes the existence of a is a single authoritative name serve for every sub-domain www.alteon.com represented by the system 100, also, as discussed above the Logan describes

the switch sending the response from the authoritative domain name server

back to the client indicates the authoritative name server is part of the distributed

network (see col. 3, lines 9-25)];

load balancing switch (106) coupled to authoritative domain name server (the

switch using an authoritative name server to resolve name resolutions resolution

and sending the response from the authoritative domain name server back to

the client indicates the authoritative name server is part of the distributed network

and coupled to the authoritative domain name server] (see col. 3, lines 9-25 and

col. 5, lines 46-59); and

(a) the authoritative domain name system server and the load balancing switch

being separate network devices (see fig. 2 and col. 6, lines 51-59).

 (b) capable of collecting a first set of performance metrics regarding said

network [health and throughput] (see col. 5, line 60-65);

(c) capable of arranging a list of network addresses from said authoritative

domain name server in accordance with first set performance metrics (see the

abstract and col. 5, lines 3-65 and col. 6, lines 14-41);

the list of network devices being generated by the authoritative domain name

system server in response to a query regarding a domain name(see col. 3, lines

9-25 and col. 6, lines 14-41); and

a plurality of site switches (202) coupling said host servers (204-212) to said

network (see fig. 2 and col. 6, lines 14-36).

In considering claim 15, Logan et al., discloses a distributed load balancing

system further comprising:

collecting a second set of performance metrics (i.e. response time minimum

delay, least cost) regarding said network, said second set of performance metrics

reflecting access conditions (load, throughput or availability) to said host servers

(204) at each of said site switches (202) (see fig. 2, and col. 6, line 14-41);

sending said second set of performance metrics from said site switches (204) to

said load balancing switches (108)(see col. 6, line 14-41); and

including said second set of performance metrics with said first set of

performance metrics [that is the load balancing switch including second

performance metric i.e. response time received from site switches 202 with first

performance metric i.e. health of the network or in other wards combing several

performance metric to determine best site or server](see col. 5, lines line 46 to

col. 6, line 3 and col. 11, line 50 to col. 6, line 4).

In considering claim 16, Logan et al., disclose a distributed load balancing

system wherein said first set of performance metrics includes a health check sent

from said load balancing switch to each of said site switches (see col. 6, lines 14-

41).

In considering claim 17, Logan et al., disclose a distributed load balancing

system wherein, when any of said host servers fails said health check, a network

address of said failed host server is provided a lesser position in said ordered list

(col. 7, lines 10-35 and col. 11, line 41 to col. 12, line 3).

In considering claim 18, Logan et al., discloses a distributed load balancing

system, wherein said collection of said second set of performance metrics

includes recording, at each site switch, a number of sessions(connections)

connected to host servers having network addresses configured on said site

switch (that is determining if host servers reach at there respective Maximum

connection)(see col. 5, lines 38-45 and col. 9, lines 1-35).

In considering claim 19, Logan et al., discloses a distributed load balancing

system wherein when said number of sessions (connection) at said site switch

exceeds a predetermined percentage of that site switch's maximum capacity, a

corresponding one of said network addresses is provided a lesser position in said

ordered list [i.e. ordering the list of IP addresses for host server 210, 204, 206,

and 208 in order of priority, the 900 msec response time of server 210 gets

highest position] (see col. 6, lines 14-41 and col. 9, lines 5-35).

In considering claim 20, Logan et al., discloses a distributed load balancing

system, wherein said collecting said second set of performance metrics includes

recording, at each site switch, a round trip time indicative of elapse time

(response time) for exchanging messages between each site switch and a client

machine of said computer network (see col. 5, lines 3-59).

In considering claim 21, Logan et al., discloses a system, wherein said round trip time being an actual recorded time period between said site switch receiving a connection request from said client machine and said site switch receiving an acknowledgment of a connection from said client machine (response time includes the transmission time, the processing time, transmission time back to the originator), (see col. 5, lines 3-59 and col. 6, lines 14-41).

In considering claim 22, Logan et al., discloses a system wherein said arranging takes into consideration the geographical location of said originator of said query (see col. 10, lines 6-65).

In considering claim 23, Logan et al., discloses a system, wherein said collecting of said first set of performance metrics includes recording a time interval for each site switch between said load balancing switch initiating said health check and said load balancing switch receiving a response from said site switch (see col. 5, line 3 to col. 6, lines 13).

In considering claim 24, Logan et al., discloses a system, wherein said arranging selects a network address of a least recently selected host server for placement at a higher position in said ordered list (i.e. host with 900 msec response time is the least selected host and is positioned highest on the list)(see col. 6, lines 14-41).

In considering claim 25, Logan et al., discloses a system, further comprising said
load balancing switch limiting a valid time (TTL) for each network address in said
ordered list to less than predetermined value (see col. 11, lines 9-13).

In considering claim 26, Logan et al., discloses a system, further comprising,
when a connection request is received at a site switch for a connection to one of
said host servers, said site switch redirecting said connection request to another
one of said host servers (see col. 5, lines 38-45 and col. 10, line 66 to col. 11,
line 9).

As per claims 70 and 91, Logan discloses a method load balancing among host
servers a data network, the method comprising:

storing, a load balancing switch of the data network, round trip time data, wherein
the round trip time data a time for exchanging at least one message between a
first host server site switch of the data network and a first client machine of the
data network (see fig. 2 and col. 6, lines 30-41); and

ordering, in the load balancing switch, a plurality of network addresses, the
network addresses being responsive to a query regarding a domain name,
wherein the load balancing switch is capable of ordering the plurality of network
addresses based, least in part, on the round trip time data (see tables I and II col.
9, lines 12-35).

As per claims 71-77, Logan discloses the method of claim 70, further comprising:

creating a table, in the load balancing switch, using the round trip time data, wherein the table is indexed by network neighborhood and sending a health check message to each of the plurality of network addresses from the load balancing switch (see tables I and II

As per claims 78-84, Logan discloses the method of claim 70, wherein the first host server site switch is one of a plurality of host server site switches of the data network, and the first client machine is one of a plurality of client machines of the data network, and further comprising:

storing, in the load balancing switch, round trip time data received from each of the plurality of host server site switches, wherein each said round trip time data is a time for exchanging at least one message between a respective one of the host server site switches and a respective one of the plurality of client machines network (see fig. 2 and col. 6, lines 30-41).

As per claims 86 and 96, Logan discloses A method of load balancing among host servers of a data network, the method comprising:

receiving, at a load balancing switch of the data network, a query regarding a domain name (see col. 5, lines 46-59); and

selecting, from a plurality of network addresses responsive to the request, a best network address based, at least in part, on which of the plurality of network addresses has been least recently selected by the load balancing switch as a

best network address in response to previous queries (i.e., server best response

time) (see col. 5, lines 46-59 and tables I-IV).

As per claims 87-90, Logan discloses the method of claim 86, further comprising:

storing, at the load balancing switch, round trip time data, wherein each said

round trip time data is a time for exchanging at least one message between a

respective one of a plurality of host server site switches of the data network and

a respective one a plurality client machines of the data network (see fig. 2n, and

col. 6, lines 14-41).

As per claims 92-95, Logan discloses the load balancing switch of claim 91,

further comprising:

means for ordering the plurality of network addresses based, at least in part, on

which of the network addresses has been least recently selected as a best

network address response to previous queries(see tables I and II col. 9, lines 12-

35).

As per claim 97-99, Logan discloses the load balancing switch of claim 96,

further comprising:

a means for ordering the plurality of network addresses based, at least in part, on

a session capacity of a plurality of host server site switches, each said host

server site switch being coupled between the load balancing switch and at least

one of the host servers(see tables I and II col. 9, lines 12-35).

As per claim 100, Logan discloses a data networking method comprising:

storing, in a host server site switch (202) through which a plurality of host servers

(204-212)of a data network are accessed, round trip time data, the round trip

time data being a time for exchanging at least one message between the host

server site switch and a client machine of the data network (see fig. 2 and col. 6,

lines 30-41); and

communicating the round trip time data to a load balancing switch the data

network. (see col. 6, lines 51-59)

As per claim 101, Logan discloses the data networking method of claim 100,

further comprising communicating a number of sessions of the host server site

switch to the load balancing switch (see col. 6, lines 14-30).

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

CONCLUSION

6.   The prior art made of record and relied upon is considered pertinent to the

applicant's disclosure.

7.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Salad E Abdullahi whose telephone number

is 571-272-4009. The examiner can normally be reached on 8:30 - 5:00. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone

number for the organization where this application or proceeding is assigned is

571-273-8300.

8.   Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

ABDULLAHI SALAD
PRIMARY EXAMINER
10/29/05